ipd1100mddbvipTES-10

Defense Information Infrastructure (DII)
Common Operating Environment (COE)

Installation Procedures (IP)
for the
METOC DBDB-V Data (MDDBV) Segment
of the
Tactical Environmental Support System Next Century
[TESS(NC)]
Meteorology and Oceanography (METOC) Database

Preliminary Release

Document Version 1.1

2 October 1998

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1   SCOPE

1.1   Identification

These Installation Procedures (IP) describe the installation of the Meteorology and Oceanography (METOC) Digitized Bathymetric Data Base – Variable resolution (DBDB-V) Data (MDDBV) Segment, Version 1.1 series, of the Tactical Environmental Support System Next Century [TESS(NC)] METOC Database. The MDDBV segment provides storage for historical DBDB Data.   This software is designed to run under the Defense Information Infrastructure (DII) Common Operating Environment (COE), release 3.1, on a Hewlett-Packard computer running HP-UX 10.20 or a personal computer running the Microsoft Windows NT 4.0 operating system with Service Pack 3.

1.2   System Overview

The database described in this document forms a portion of the METOC Database component of the TESS(NC) Program (Navy Integrated Tactical Environmental Subsystem (NITES) Version I). On 29 October 1996, the Oceanographer of the Navy issued a TESS Program Policy statement in letter 3140 Serial 961/6U570953, modifying the Program by calling for five seamless software versions that are DII COE compliant, preferably to level 5.

The five versions are:

- NITES Version I   The local data fusion center and principal METOC analysis and forecast system (TESS(NC))

- NITES Version II   The subsystem on the Joint Maritime Command Information System (JMCIS) or Global Command and Control System (GCCS) (NITES/Joint METOC Segment (JMS))

- NITES Version III   The unclassified aviation forecast, briefing, and display subsystem tailored to Naval METOC shore activities (currently satisfied by the Meteorological Integrated Data Display System (MIDDS))

- NITES Version IV   The Portable subsystem composed of independent PCs/workstations and modules for forecaster, satellite, communications, and Integrated Command, Control, Communications, Computer, and Intelligence Surveillance Reconnaissance (IC4ISR) functions (currently the Interim Mobile Oceanographic Support System (IMOSS))

- NITES Version V   Foreign Military Sales (currently satisfied by the Allied Environmental Support System (AESS))

NITES I acquires and assimilates various METOC data for use by US Navy and Marine Corps weather forecasters and tactical planners. NITES I provides these users with METOC data, products, and applications necessary to support the warfighter in tactical operations and decision making. NITES I provides METOC data and products to NITES I and II applications, as well as non-TESS(NC) systems requiring METOC data, in a heterogeneous, networked computing environment.

The TESS(NC) Concept of Operations and system architecture require that the METOC Database be distributed both in terms of application access to METOC data and products and in terms of physical location of the data repositories. The organizational structure of the database is influenced by these requirements, and the components of this distributed database are described below.

In accordance with DII COE database concepts, the METOC Database is currently composed of five DII COE-compliant *shared database* segments and one DII COE-compliant data segment. Associated with each shared database and data segment is an Application Program Interface (API) segment. This organization is shown in Figure 1-1. The segments are arranged by data type as follows:

Data Type	**Data Segment**	**API Segment**
Grid Fields	MDGRID	MAGRID
Latitude-Longitude-Time (LLT) Observations	MDLLT	MALLT
Textual Observations and Bulletins	MDTXT	MATXT
Remotely Sensed Data	MDREM	MAREM
Imagery	MDIMG	MAIMG
Historic Bathymetry Data	MDDBV	MADBV

Grid Field DB Segment (MDGRID)

LLT Observation DB Segment (MDLLT)

Text Observation DB Segment (MDTXT)

Imagery DB Segment (MDIMG)

Remotely Sensed DB Segment (MDREM)

Digital Bathymetric Data Segment (MDDBV)

DII COE Provided DBAdm Segment

DII COE Provided COTS RDBMS Server Segment
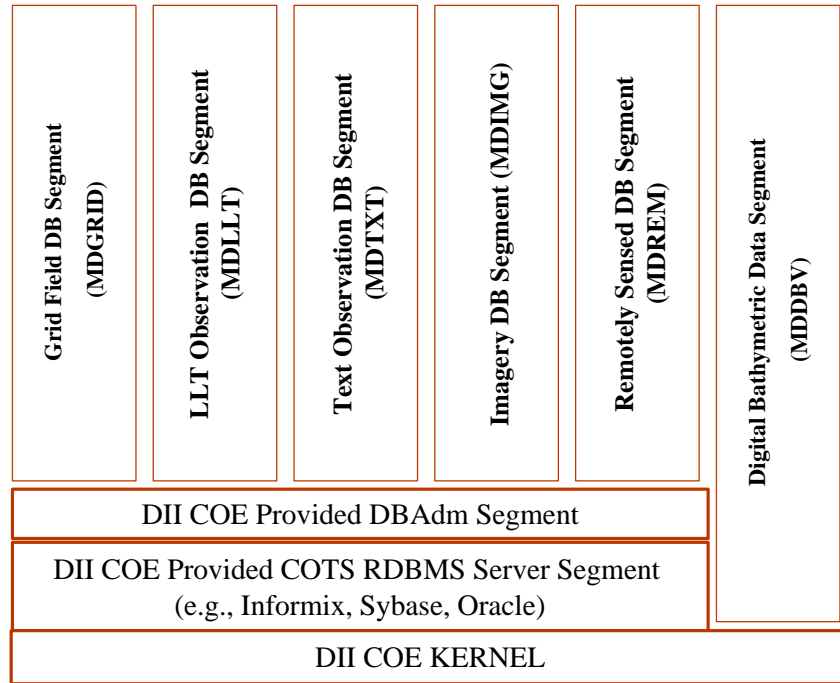(e.g., Informix, Sybase, Oracle)

DII COE KERNEL

Figure 1-1. TESS(NC) METOC Database - DII COE Segment View

Typical client-server installations access shared database segments via a COTS RDBMS client/server as shown in Figure 1-2. This shows the shared database segments residing on a DII COE SHADE database server, with a NITES I or II client machine hosting the API segments. Communication between API segments and shared database segments is accomplished over the network using ANSI-standard Structured Query Language (SQL).

Nites I/II under HP-UX

Nites I/II under Windows/NT

App   App   App

App   App

TEDS API Segments

TEDS API Segments

Data & Products

Data & Products

METOC Database Segments

COTS RDBMS Server Segments

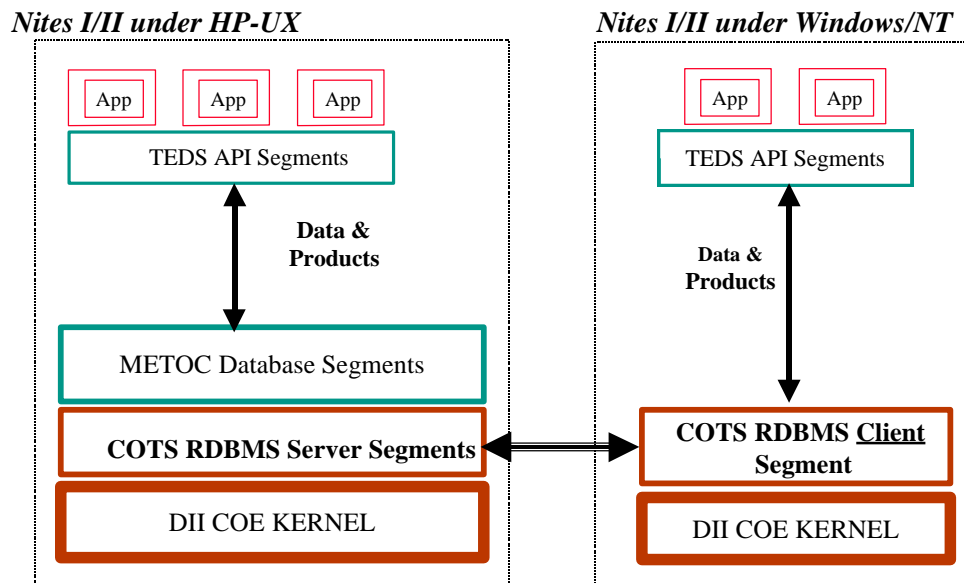**COTS RDBMS Client Segment**

DII COE KERNEL

DII COE KERNEL

Figure 1-2. Distributed APIs via COTS RDBMS Client/Server Functionality

Data Segments are static files of historic data. DII COE data segments are available over a distributed network via DII COE Kernel Service (NFS). In this case, the data segments are accessed directly by the distributed APIs (Figure 1-3). The platform running the applications needing the data must first mount the file system containing the data segment. The remote system may then access the data from the mounted drive using NFS services. Access to the mounted drive is then transparent to the application/API utilizing the data.

Nites I/II under HP-UX   *Nites I/II under Windows/NT*

App   App   App

TEDS API Segments

Data & Products

METOC DB Data
Segments (OAML DBs)

DII COE KERNEL

App   App

TEDS API Segments

**Data & Products
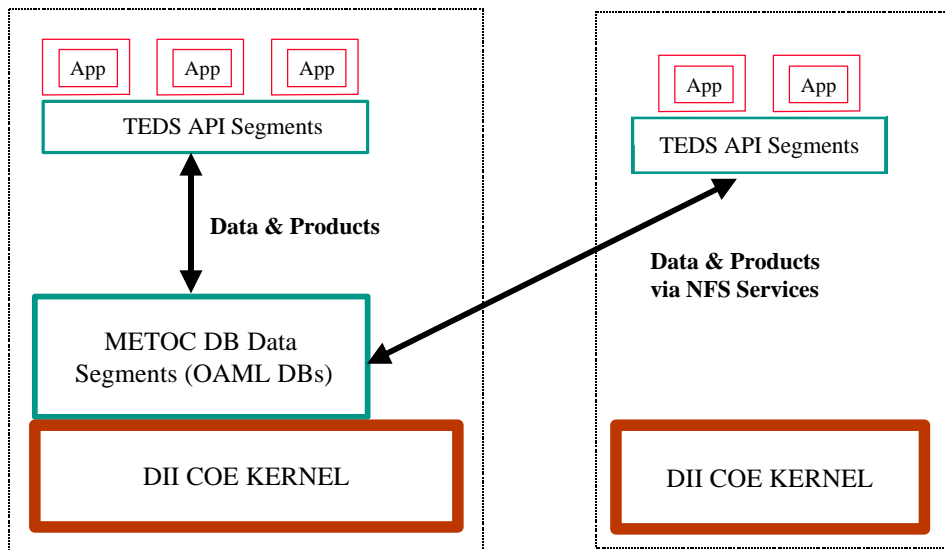via NFS Services**

DII COE KERNEL

Figure 1-3. Distributed APIs via DII COE Kernel Services (NFS)

The MDDBV segment deals with historic bathymetry data. The data are generated from the Oceanographic and Atmospheric Master Library (OAML) DBDB-V data and provide global water depth at various resolutions throughout the world.

2   REFERENCED DOCUMENTS

2.1   Government Documents

<u>STANDARDS</u>

MIL-STD-498 5 December 1994	*Software Development and Documentation*

<u>SPECIFICATIONS</u>

Unnumbered 5 December 1997	*Performance Specification (PS) for the Tactical* *Environmental Support System/Next Century TESS(NC)* *(AN/UMK-3)*
Unnumbered 30 September 1997	*Software Requirements Specification for the Tactical* *Environmental Support System/Next Century [TESS(3)/NC]* *Meteorological and Oceanographic (METOC) Database*, Space and Naval Warfare Systems Command, Environmental Systems Program Office (SPAWAR PMW-185), Washington, DC

<u>OTHER DOCUMENTS</u>

Unnumbered 30 September 1997	*Database Design Description for the Tactical* *Environmental Support System/Next Century [TESS(3)/NC)]* *Meteorological and Oceanographic (METOC) Database*, Space and Naval Warfare Systems Command, Environmental Systems Program Office (SPAWAR PMW-185), Washington, DC
DII.COE.DocReqs-5 29 April 1997	*Defense Information Infrastructure (DII) Common* *Operating Environment (COE) Developer Documentation* *Requirements, Version 1.0*
ipd1100madbvrmTES-10 2 October 1998	*Application Program Interface Reference Manual (APIRM)* *for the METOC DBDB-V API (MADBV) Segment of the* *Tactical Environmental Support System Next Century* *[TESS(NC)] Meteorology and Oceanography (METOC)* *Database*

ipd1100madbvpmTES-10 2 October 1998	*Programming Manual (PM) for the METOC DBDB-V API (MADBV) Segment of the Tactical Environmental Support System Next Century [TESS(NC)] Meteorology and Oceanography (METOC) Database*
ipd1200mddbvsvdTES-10 2 October 1998	*Software Version Description (SVD) for the METOC DBDB-V Data (MDDBV) Segment of the Tactical Environmental Support System Next Century [TESS(NC)] Meteorology and Oceanography (METOC) Database*
DII.COE31.HP10.20.CIP 23 May 1997	*DII COE V3.1 HP 10.20 Consolidated Installation Procedures*
DII.3010.HP1020.KernelP1.IG-1 9 May 1997	*DII COE Kernel 3.0.1.0P1 Patch 1 for HP-UX 10.20 Installation Guide*
DII.3010.HP1020.KernelP2.IG-1 30 July 1997	*DII COE Kernel 3.0.1.0P2 Patch 2 for HP-UX 10.20 Installation Guide*
DII.3010.HP1020.KernelP3.IG-1 08 August 1997	*DII COE Kernel 3.0.1.0P3 Patch 3 for HP-UX 10.20 Installation Guide*
DII.3010.HP1020.KernelP4.IG-1 27 August 1997	*DII COE Kernel 3.0.1.0P4 Patch 4 for HP-UX 10.20 Installation Guide*

2.2   Non-Government Documents

None.

3   SYSTEM ENVIRONMENT

3.1   System Requirements

3.1.1   Hardware Requirements

The MDDBV segment is hosted on the Tactical Advanced Computer, TAC-3 (HP 750/755)/ TAC-4 (HP J210).

The following configurations are recommended:

RAM: 128 MB minimum, 192 MB optimum
Disk Space: 2 GB
Swap Space: 300 MB

3.1.2   Operating System Requirements

HP-UX 10.20

3.1.3   Kernel Requirements

Kernel 3.0.1.0 with patches through P4

3.2   System and Site Preparations

3.2.1   System Configuration

The following software must be properly installed prior to loading the MDDBV segment:

• Appropriate operating system (as described above),

• Appropriate DII COE Kernel (as described above),

3.2.2   Operating System Preparation

Information needed to prepare the operating system is found in these documents:

• DII COE V3.1 HP 10.20 Consolidated IP

• DII COE Kernel 3.0.1.0P1 Patch 1 for HP-UX 10.20 Installation Guide

• DII COE Kernel 3.0.1.0P2 Patch 2 for HP-UX 10.20 Installation Guide

- DII COE Kernel 3.0.1.0P3 Patch 3 for HP-UX 10.20 Installation Guide

- DII COE Kernel 3.0.1.0P4 Patch 4 for HP-UX 10.20 Installation Guide

3.2.3   Tape/Disk Preparation

The MDDBV segment software is delivered on a 4 mm DAT cartridge for the TAC-3/TAC-4 hardware environment.

4 INSTALLATION INSTRUCTIONS

MDDBV is a component of a DII COE database system. The following procedures describe the installation of the MDDBV software.

4.1 Installation on TAC-3/TAC-4 Systems

4.1.1 Media Booting Procedures for TAC-3/TAC-4 Systems

To prepare a tape for installation:

1. Insert the tape in the DAT drive.

2. Log in as sysadmin.

3. Select the System Administration SEGMENT INSTALLER utility under the **Software** pull-down menu.

4. Select the source and click the **Read Contents** button. The contents of the tape appear in the SELECT SOFTWARE TO INSTALL portion of the SEGMENT INSTALLER window.

4.1.2 Installation Procedures for TAC-3/TAC-4 Systems

To install the MDDBV software: (NOTE: Prior to segment installation, ensure that no existing MDDBV segment is installed on the target platform. If so, select the MDDBV segment in the CURRENTLY INSTALLED SEGMENTS section of the window. Select the **Deinstall** button and follow the instructions on the screen to remove the MDDBV segment.)

1. First ensure that the operating system (OS) and Kernel, with all patches, are installed. Instructions for installing the OS, Kernel, and patches are contained in the HP-UX documentation cited in Section 3.2.2.

2. Install the MDDBV segment from the installation tape.

   • Highlight **METOC DBDB-V Data Segment**.

   • Click the **Install** button.

3. The INSTALL STATUS dialog box will appear.

4. Once the installation is complete, the SEGMENT INSTALLER window will appear. The **METOC DBDB-V Data Segment** will be displayed in the CURRENTLY INSTALLED SEGMENTS section of the window.

4.2   Installation of Upgrades

Installation of upgrades will generally follow the same procedures listed above.

4.3   Installation Verification

All successfully installed segments are listed in the CURRENTLY INSTALLED SEGMENTS portion of the INSTALLER window on TAC-3/TAC-4 systems.

4.4   Initializing the Software

This section is tailored out. No initialization of the software is required.

4.5   List of Changes and Enhancements

This section is tailored out. Discussion of MDDBV features may be found in the MADBV API Reference Manual and Programming Manual, cited in Section 2.

4.6   Important Considerations

This section is tailored out.

5 NOTES

5.1 Glossary of Acronyms

AESS   Allied Environmental Support System

API   Application Program Interface

APIRM   API Reference Manual

COE   Common Operating Environment

DII   Defense Information Infrastructure

GCCS   Global Command and Control System

IC4ISR   Integrated Command, Control, Communications, Computer, and Intelligence Surveillance Reconnaissance

IMOSS   Interim Mobil Oceanographic Support System

IP   Installation Procedures

JMCIS   Joint Maritime Command Information System

JMS   Joint METOC Segment

LLT   Latitude-Longitude-Time

MADBV   METOC DBDB-V API Segment of the TESS(NC) METOC Database

MDDBV   METOC DBDB-V Data Segment of the TESS(NC) METOC Database

METOC   Meteorology and Oceanography

MIDDS   Meteorological Integrated Data Display System

NITES   Navy Integrated Tactical Environmental Subsystem

OAML   Oceanographic and Atmospheric Master Library

OS   Operating System

PM   Programming Manual

PS   Performance Specification

SQL   Structured Query Language

SVD   Software Version Description

TESS(NC)   Tactical Environmental Support System Next Century